Application No.: 10/017,410
Response dated: September 15, 2005
Reply to Office Action dated: 06/16/2005

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 1. (canceled)
- 2. (currently amended) An isolated nucleic acid having a nucleotide sequence selected from the group consisting of (i) a polynucleotide that encodes consisting of a coding sequence for a polypeptide selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4, (ii) a coding sequence of SEQ ID NO:1, and (iii) a coding sequence of SEQ ID NO:3, (iv) a nucleic acid having at least about 80% nucleotide sequence identity to at least one of the coding sequence of SEQ ID NO:1 over the full length of the coding sequence of SEQ ID NO:3 over the full length of the coding sequence of SEQ ID NO:3, and (v) a nucleic acid that hybridizes to at least one of the coding sequence of SEQ ID NO:1 over the full length of the coding sequence of SEQ ID NO:1 and the coding sequence of SEQ ID NO:3 over the full length of the coding sequence of SEQ ID NO:1 and the coding sequence of SEQ ID NO:3 over the full length of the coding sequence of SEQ ID NO:1 and 100:3 any of the foregoing, in 40% formamide, 1M NaCl and 1% SDS upon incubation at 37°C followed by washing in 1X SSC at 45°C, wherein the nucleic acids of (iv) and (v) encode a protein overexpressed in liver tumor cells relative to regenerating normal liver cells.
- 3. (original) A genetic construct comprising a polynucleotide of Claim 2 downstream from a heterologous promoter.
 - 4. (original) A host cell transfected with the genetic construct of Claim 3.
 - 5. (canceled)
- 6. (currently amended) A method for identifying modulators of expression of a polypeptide of Claim 1 or the polynucleotide of Claim 2 a polynucleotide consisting of a coding sequence for a polypeptide selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4, the method including the step of observing a change in the level of expression of the polypeptide or polynucleotide in a host cell after exposure of the host cell to a modulating agent.

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7. (currently amended) A method for diagnosing a hepatocellular cancer in tumor cells from a liver of a human or non-human animal, the method comprising the steps of:

determining an expression level in the liver tumor cells of a polypeptide that is differentially expressed in cancerous liver tumor cells and regenerating liver cells, or of a polynucleotide encoding consisting of a coding sequence for a polypeptide selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4 the polypeptide;

determining the expression level in regenerating liver tissue of the polypeptide or of the polynucleotide encoding the polypeptide;

diagnosing a hepatocellular cancer when the expression level in the liver tumor cells is higher than the expression level in the regenerating liver tissue.

8. (canceled)

9. (currently amended) A method as claimed in Claim 7 wherein at least one of the expression level determining steps comprises the step of hybridizing to cellular mRNA, under moderately stringent conditions in 40% formamide, 1M NaCl and 1% SDS upon incubation at 37°C followed by washing in 1X SSC at 45°C, a nucleic acid molecule having a nucleotide sequence selected from the group consisting of (i) a polynucleotide that encodes the complement of which consists of a coding sequence for a polypeptide selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4, (ii) the complement of a coding sequence of SEQ ID NO:1, (iii) the complement of a coding sequence of SEQ ID NO:3, (iv) a nucleic acid having at least about 80% nucleotide sequence identity to at least one of the coding sequence of SEQ ID NO:1 or and the coding sequence of SEQ ID NO:3, and (v) an oligonucleotide that hybridizes under said moderately stringent hybridization conditions to at least one of the coding sequence of SEQ ID NO:1 and the coding sequence of SEQ ID NO:3 any of the foregoing, the nucleic acid molecule being of sufficient length to form a hybrid with the cellular mRNA.

10. (canceled)

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11. (currently amended) A kit comprising:

at least one an oligonucleotide or a polynucleotide that hybridizes under defined conditions to a nucleotide coding sequence for a polypeptide selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4, a nucleic acid having a nucleotide sequence selected from the group consisting of a polynucleotide that encodes a polypeptide selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4, a coding sequence of SEQ ID NO:1 and SEQ ID NO:3, a nucleic acid having at least about 80% nucleotide sequence identity to the coding sequence of SEQ ID NO:1 or SEQ ID NO:3, and a nucleic acid that hybridizes to any of the foregoing, in the defined conditions being 40% formamide, 1M NaCl and 1% SDS upon incubation at 37°C followed by washing in 1X SSC at 45°C; and at least one of a positive control and a negative control for evaluating a level

at least one of a positive control and a negative control for evaluating a level of expression of the nucleotide coding sequence at least one of the polypeptide and the nucleic acid that encodes the polypeptide in a sample.

- 12. (currently amended) A kit as claimed in Claim 11 wherein the positive control is selected from the group consisting of liver tumor cells, and an extract of liver tumor cells, the positive control having a quantitatively predetermined level of expression of the polypeptide or the polypucleotide.
- 13. (currently amended) A kit as claimed in Claim 11 wherein the negative control is selected from the group consisting of non-tumor liver cells and an extract of non-tumor liver cells, the negative control having a quantitatively predetermined level of expression of the polypeptide or the polypucleotide.

14-15. (canceled)

16. (new) The isolated nucleic acid of claim 2 wherein the nucleic acid of (iv) has at least about 85% nucleotide sequence identity to at least one of the coding sequence of SEQ ID NO:1 over the full length of the coding sequence of SEQ ID NO:1 and the coding sequence of SEQ ID NO:3 over the full length of the coding sequence of SEQ ID NO:3.

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17. (new) The isolated nucleic acid of claim 2 wherein the nucleic acid of (iv) has at least about 90% nucleotide sequence identity to at least one of the coding sequence of SEQ ID NO:1 over the full length of the coding sequence of SEQ ID NO:1 and the coding sequence of SEQ ID NO:3 over the full length of the coding sequence of SEQ ID NO:3.

18. (new) The isolated nucleic acid of claim 2 wherein the nucleic acid of (iv) has at least about 95% nucleotide sequence identity to at least one of the coding sequence of SEQ ID NO:1 over the full length of the coding sequence of SEQ ID NO:3 over the full length of the coding sequence of SEQ ID NO:3.